UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,098	10/15/2001	Hiroaki Yoshino	35.G2919	9468

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EXAMINER
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ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 12/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 September 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   In response to the Office Action mailed June 21, 2005, applicant submitted an

amendment filed on September 21, 2005, in which the applicant traversed and

requested reconsideration with respect to amended **claims 1, 8 and 15**.

Response to Arguments

2.   Applicants argue that nowhere is the patent understood to disclose that this

speech recognition determines the storing of the input speech as learning data, as

required by amended claim 1. In addition, applicants argue that the comparing of two

training examples uttered by a user does not constitute the performance of speech

recognition because such a comparison of two utterances is not the same as obtaining

a recognized character string corresponding to a stored recording character string, as

recited in amended claim 1. However applicant's arguments are not persuasive.

Keiller teaches that after the system has been trained, the speech recognition

system can then compare the input utterance from a user with the stored word models

in order to provide a recognition result (column 16, lines 16-19).

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

4.   Claims 17-18 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Claim 17-18 are drawn to a "program" *per se* as recited in the preamble and as

such is/are non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures

not claimed as embodied in computer readable media are descriptive material *per se*

and are not statutory because they are not capable of causing functional change in the

computer. See, e.g., *Warmerdam*, 33 F.3d at 1361,31 USPQ2d at 1760 (claim to a data

structure *per se* held nonstatutory). Such claimed data structures do not define any

structural and functional interrelationships between the data structure and other claimed ·

aspects of the invention, which permit the data structure's functionality to be realized. In ·

contrast, a claimed computer readable medium encoded with a data structure defines

structural and functional interrelationships between the data structure and the computer

software and hardware components which permit the data structure's functionality to be

realized, and is thus statutory. Similarly, computer (control) programs claimed as

computer listings *per se*, i.e., the descriptions or expressions of the programs are not

physical "things." They are neither computer components nor statutory processes, as

they are not "acts" being performed. Such claimed computer (control) programs do not

define any structural and functional interrelationships between the computer (control)

program and other claimed elements of a computer, which permit the computer (control)

program's functionality to be realized.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   **Claims 1-3, 8-10 and 15-18** are rejected under 35 U.S.C. 102(e) as being

anticipated by Keiller (USPN 6,560,575).

Regarding claims **1, 8, and 15**, Keiller discloses an apparatus, method and

system for recording speech, to be used as learning data for recognizing input speech,

comprising:

storage means for storing a recording character string indicating a sentence to be

recorded (column 16, lines 12-19);

recognition means for recognizing input speech for use as the learning data so

as to obtain a recognized character string (input is taken as two training examples: one

a new example and one an already existing example; column 15, lines 25-35)

corresponding to the stored recording character string pattern (column 16, lines 16-19);

determination means for comparing a pattern of the recognized character string

with a pattern if the recording character string stored in said storage means so as to

obtain a matching rate therebetween, and determining whether said matching rate

exceeds a predetermined level (system checks whether training examples are

consistent (column 15, lines 28-30) by computing the consistency scores (column 15,

lines 53-65) and comparing the result again against the threshold (95%, column 16,

lines 6-8)); and

recording means for recording the input speech as the learning data for

recognizing speech when it is determined by said determination means that said

matching rate exceeds a predetermined level (if the results are consistent, they are

used to generate a model for word being trained (column 15, lines 27-30), so inherently,

the generated model is stored (recorded) to some memory means (see also column 16,

lines 12-15)).

Regarding **claims 2 and 9**, Keiller discloses an apparatus and method further

comprising re-input instruction means for issuing an instruction to input speech once

again when it is determined by said determination means for issuing an instruction to

input speech once again when it is determined by said determination means that said

matching rate does not exceed the predetermined level (if words do not match, the

system required a new example; column 15, lines 32-35).

Regarding **claims 3 and 10**, Keiller discloses an apparatus and method wherein

said determination means determines said matching rate by performing DP matching

between the recognized character string pattern and the recording character string

pattern (dynamic programming is used to determine whether the inputted words are

consistent with each other; column 14, lines 48-55 with column 15, lines 54-65).

Regarding **claim 16**, Keiller discloses a speech recognition method comprising:

a learning recognition step of recognizing input speech, to be used as learning data, so as to obtain a recognized character string (input is taken as two training examples: one a new example and one an already existing example; column 15, lines 25-35);

a determination step of comparing a pattern of the recognized character string with a pattern of a recording character string indicating a sentence to be recorded so as to obtain a matching rate therebetween, and of determining whether said matching rate exceeds a predetermined level (system checks whether training examples are consistent (column 15, lines 28-30) by computing consistency scored (column 15, lines 53-65) and comparing the result against a threshold (95%, column 16, lines 6-8));

a recording step of recording the input speech as the learning data for recognizing speech when it is determined in said determination step that said matching rate exceeds a predetermined level (if results are consistent, they are used to generate a model for word being trained (column 15, lines 27-30), so inherently, the generated model is stored (recorded) to a memory means (column 16, lines 12-19));

a learning step of performing learning on a speech model by using the input speech recorded in said recording step (the process described above provides general training of the model; column 16, lines 14-20); and

a recognition step of recognizing unknown input speech by using the speech model learned in said learning step (training data is used in general recognition; column 16, lines 14-20).

Regarding **claims 17 and 18**, Keiller discloses a control program having computer readable program code and a speech recognition method, comprising:

a first program code unit for recognizing input speech used as the learning data so as to obtain a recognized character string pattern (input is taken as two training examples: one a new example and one an already existing example; column 15, lines 25-35);

a second program code unit for comparing a pattern of the recognized character string with a pattern of recording character string indicating a sentence to be recorded so as to obtain a matching rate therebetween, and of determining whether said matching rate exceeds a predetermined level system checks whether training examples are consistent (column 15, lines 28-30) by computing consistency scored (column 15, lines 53-65) and comparing the result against a threshold (95%, column 16, lines 6-8);

a third program code unit for recording the input speech as the learning data for recognizing speech when it is determined in said determination step that said matching rate exceeds a predetermined level (if results are consistent, they are used to generate a model for word being trained (column 15, lines 27-30), so inherently, the generated model is stored (recorded) to a memory means (column 16, lines 12-19));

a fourth program code unit for performing learning on a speech model by using the input speech recorded in said record step (the process described above provides general training of the model; column 16, lines 14-20); and

a fifth program code unit for recognizing unknown input speech by using the

speech model learned in said learning step (training data is used in general recognition;

column 16, lines 14-20).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   **Claims 4-7 and 11-14** rejected under 35 U.S.C. 103(a) as being unpatentable

over Keiller in view of Yu (USPN 6,556,841).

Regarding **claims 4 and 11**, Keiller discloses an apparatus and method for

recording speech, to be used as learning data in speech recognition processing, but

lacks further comprising presentation means for presenting an unmatched portion

between the recognized character string pattern and the recording character string

pattern to a user as a result of performing the DP matching by said determination

means.

Yu discloses a speech correction device further comprising presentation means

for presenting an unmatched portion (no substantial match) between the recognized

character string pattern (character strings) and the recording character string pattern to

a user as a result of performing the DP matching by said determination means (plurality

if character strings stored in a dictionary; column 5, lines 15-22), for implementing spell

checking and correcting applications.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Keiller's apparatus and method further

comprising presentation means for presenting an unmatched portion between the

recognized character string pattern and the recording character string pattern to a user

as a result of performing the DP matching by said determination means, to identify

unrecognized character strings (e.g. misspelled words) and to provide a notification or

indication (column 6, lines 26-28).

Regarding **claims 5 and 12**, Keiller discloses an apparatus and method for

recording speech, to be used as learning data in speech recognition processing, but

lacks wherein said presentation means presents the unmatched portion so as to identify

the type of error as an insertion error, a missing error, or a substitute error, as a result of

performing the DP matching by said determination means.

Yu discloses a speech correction device wherein said presentation means

presents the unmatched portion so as to identify the type of error (column 5, line 35) as

an insertion error (adding the character input; column 3, lines 46-52), a missing error (?

indicates that variations due; column 8, lines 44-47), or a substitute error (character

substitution; column 8, lines 3-29 with column 7, lines 41-42 and lines 61-66), as a

result of performing the DP matching by said determination means (column 7, lines 11-

42), for notification and identification of unrecognized words.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Keiller's apparatus and method wherein said

presentation means presents the unmatched portion so as to identify the type of error

as an insertion error, a missing error, or a substitute error, as a result of performing the

DP matching by said determination means, to identify unrecognized character strings

(e.g. misspelled words) and to provide a notification or indication (column 6, lines 26-

28).

Regarding **claims 6 and 13**, Keiller discloses an apparatus and method for

recording speech, to be used as learning data in speech recognition processing, but

lacks wherein said presentation means simultaneously displays the recognized

character string and the recording character string on a screen by changing a character

attribute or a background attribute of an unmatched portion or a matched portion of at

least one of the recognized character string and the recording character string.

Yu discloses a speech correction device wherein said presentation means

simultaneously displays the recognized character string and the recording character

string on a screen by changing a character attribute or a background attribute of an

unmatched portion or a matched portion of at least one of the recognized character

string and the recording character string, (underlined, bold, italics etc.; column 6, lines

8-18), for notification and identification of unrecognized words.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Keiller's apparatus and method wherein said

presentation means simultaneously displays the recognized character string and the

recording character string on a screen by changing a character attribute or a

background attribute of an unmatched portion or a matched portion of at least one of the

recognized character string and the recording character string, to identify unrecognized

character strings (e.g. misspelled words) and to provide a notification or indication

(column 6, lines 26-28).

Regarding **claims 7 and 14**, Keiller discloses an apparatus and method for

recording speech, to be used as learning data in speech recognition processing, but

lacks wherein said presentation means simultaneously displays the recognized

character string and the recording character string on a screen by causing unmatched

portion or matched portion of at least one recognized character string and the recording

character string to blink (flashing; column 6, lines 8-18), for notification and identification

of unrecognized words.

Yu discloses a speech correction device wherein said presentation means

simultaneously displays the recognized character string and the recording character

string on a screen by causing unmatched portion or matched portion of at least one

recognized character string and the recording character string to blink.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Keiller's apparatus and method wherein said

presentation means simultaneously displays the recognized character string and the

recording character string on a screen by causing unmatched portion or matched

portion of at least one recognized character string and the recording character string to

blink, to identify unrecognized character strings (e.g. misspelled words) and to provide a

notification or indication (column 6, lines 26-28).

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jakieda R. Jackson whose telephone number is

571.272.7619. The examiner can normally be reached on Monday through Friday from

7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wayne Young can be reached on 571.272.7582. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

W. R. YOUNG
PRIMARY EXAMINER

JRJ
December 2, 2005